SECTION VI. TAIL ROTOR GEARBOX

6-190. TAIL ROTOR GEARBOX.

6-191. Description - Tail Rotor Gearbox. Gearbox at top of tailboom vertical fin provides 90 degree change in direction of drive and 2.6:1 speed reduction between input driveshaft and its output shaft on which tail rotor is mounted. Gearbox consists of mating input and output gear quill assemblies set into a gear case provided with a vented oil filter cap, an oil level sight gage, and a magnetic chip detector. On helicopters with ODDS, the chip detectors straight and includes a threaded stud electrical termination. On helicopters with ODDS, the chip detector is right-angled and includes an electrical receptacle. Chip detector is connected electrically to CHIP DET capsule on the caution panel. Input quill has a flexible coupling for attachment of driveshaft.

6-192. Lubrication - Tail Rotor Gearbox.

a. Fill gearbox to sight gage level with oil prescribed by servicing points diagram (figure 1-1 and paragraph 1-8).

b. Internal splines of coupling on gearbox are packed with grease during assembly. Coupling splines can be lubricated as described below. This procedure can be accomplished with quills in place on gearbox, with driveshafts disconnected.

(1) Remove retainer ring (21, figure 6-52) from coupling while holding seal plate (22) against spring pressure.

(2) Remove centering spring (20) and spacer (18).

NOTE

Care must be taken to ensure that the retainer plug (17) does not become unseated from inner coupling (13).

CAUTION

Do not use cleaning solvent inside coupling.

(3) Hold couplings at full outward position. Remove old grease as thoroughly as possible.

(4) Hand pack grease to **0.125** inch depth over top of internal spline teeth. Use lubricant (C158).

(5) Keep coupling at full outward position, ensure retainer plug (17) and lock spring (19) are properly seated. Reinstall spacer (18), centering spring (20), seal plate (22) and retainer ring (21).

6-193. Inspection - Tail Rotor Gearbox.

a. Inspect gearbox case for cracks and damage. If crack in gearbox is suspected, refer to TM 1-1520-256-23, AVUM/AVIM NDI procedures for UH-1 helicopter series.

(1) Inspect sight glass for damage, discoloration, or staining. Inspect gearbox oil for water contamination; the oil is contaminated if it has a dirty, milky appearance. If the oil is contaminated or suspected of contamination, drain and flush until water contamination is removed, and reservice the gearbox (paragraph 1-8). If the contamination cannot be removed, replace the gearbox. Condensation on the inside of the sight glass is acceptable if the oil does not have a dirty, milky appearance.

NOTE

External leakage of seal is not permitted. A small amount of seepage, however, is normal. Continuous dripping is excessive and requires seal replacement.

b. Inspect quill for oil and grease leakage.

c. Check oil filter cap and packings for serviceability.

d. Inspect chip detector for accumulation of metal particles. Remove chip detector as follows:

(1) Disconnect electrical wire or cable plug from chip detector.

(2) Press in and turn counter-clockwise to remove chip detector probe (37 or 38).

(a) Inspect the three mounting grooves of chip detector (38, figure 6-52). Using a caliper, or similar measuring device, measure the wall thickness at the bottom of the detent. The minimum wall thickness should be 0.030 inch. If the wall thickness of the detent is less than 0.030 inch replace chip detector. ■

(b) Inspect the 3 pins located in the valve (40, figure 6-52). If pins are loose replace valve. ■

(3) Inspect for magnetic particle buildup. Retain debris. Clean, install and connect the probe.

Refer to paragraph 6-200.3 for inspection of ODDS chip detector assembly PN VM2451001 (Blade type).

(4) If chip detector is being inspected following a chip light, identify particles using information in Figure 6-14, Figure 6-14.1, Figure 6-50.1).

e. Move coupling in and out (fore and aft) with a rotational (clockwise and counter-clockwise) preload